IUCN National Committee United Kingdom

Peatland Programme

Investing in Peatlands:

Partnership for a New Peatland Era

10th – 12th September 2013
York University, United Kingdom

The Exhibition Centre

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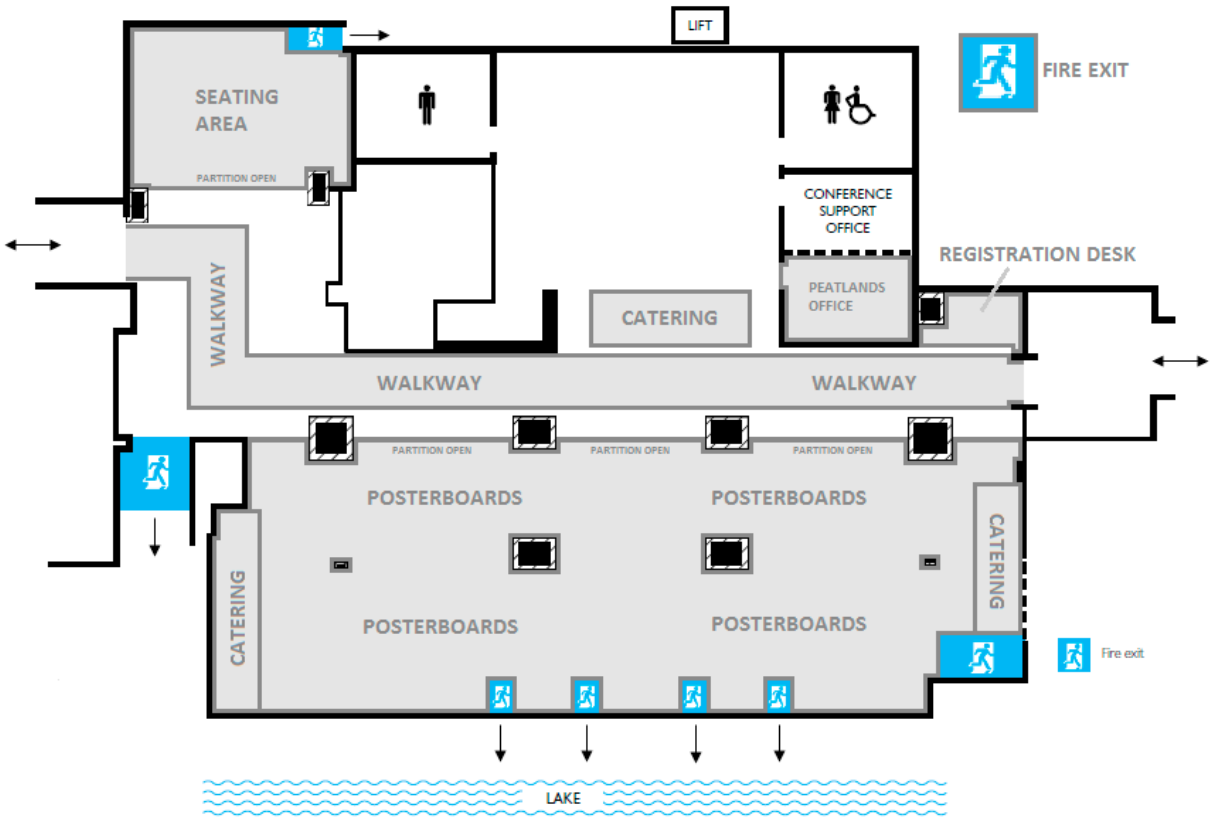

INVESTING IN PEATLANDS: PARTNERSHIP FOR A NEW PEATLAND ERA

10TH – 12TH SEPTEMBER 2013 YORK UNIVERSITY, UNITED KINGDOM

WELCOME

Investing in Peatlands – Partnership for a New Peatland Era

This year's conference comes at a major turning point in the fate of our peatlands and an exciting time for the strengthening partnership that is helping deliver long term benefits. We are delighted to have a broad range of interests being represented from research, policy, land management and the business community. A warm welcome as well to the international attendees and we look forward to sharing experiences in what we hope will be a formative event setting out the opportunities for action to conserve and enhance peatlands and their wildlife.

The IUCN UK Peatland Programme annual conferences have been running since 2010 and now in our 4th year we have a firm foundation for action following the publication of our **Commission of Inquiry** report. The UK Ministers have delivered the first ever joint Statement of Intent on Peatlands which sets out Government priorities but also recognises the importance of continuing to work in partnership.

It is clear from the research work and practical experience that we need to get on now with managing our peatlands to avoid more costly repair in future. At an international and UK level the policy framework is increasingly demanding that we look after our peatland ecosystems and their natural capital.

This year's conference sets us on a journey to delivering **1 million hectares of UK peatlands in good condition or under restoration management by 2020.** Pulling together the work across all the different sectors we plan to use this event to present an opportunities map showing the early wins. Achieving this goal will take resources to help repair the damage of the past and ensure peatland values are reflected in the support given to land managers, but it is money well spent in avoiding higher future costs. A key tool in securing the support of the businesses in our peatland work is the **Peatland Code** and we are delighted to present our progress on this at the Conference.

On behalf of the IUCN UK Peatland Programme and this year's Conference partners Defra and Yorkshire Water we thank you for helping take this exciting agenda forward.

Rob Stoneman, Chair IUCN UK Peatland Programme

GENERAL INFORMATION

The conference will take place over three days from Tuesday 10th September 2013 to the afternoon of Thursday 12th September 2013. The majority of the talks will take place in Main Lecture Theatre PX001 and the conference as a whole will be based in the Exhibition Centre. The Workshop sessions on Wednesday 11th September 2013 will take place in various rooms within the Exhibition Centre and will be outlined in the 'Programme' section.

The Registration Desk will be located in the foyer of the Exhibition Centre on the morning of Tuesday 10th September 2013 and for the remainder of the conference, the office can be found at PT003 near the Exhibition Centre entrance.

Tea, coffee, lunches and poster sessions will be located in Open Reception Area or PT005.

Location Postcodes

Main University postcode is **YO10 5DD**

Registration

Registration will take place:

Tuesday 10th September: Main Foyer of the Exhibition Centre from 11:00am–12:45

Wednesday 11th September: Office PT003 from 8:00–8:45

Thursday 12th September: Office PT003 from 8:30–9:45

Meals and Refreshments

Tuesday

Lunch 12:00–13:00 Exhibition Centre – Reception Area

Dinner 19:30–02:00 Galleria Restaurant Roger Kirk Centre

Tea and Coffee break 15:30–15:45

Wednesday

Breakfast 7:30–8:30 Galleria Restaurant Roger Kirk Centre

Lunch 11:15 Pick up packed lunches from Exhibition Centre for field trips

Dinner 19:15 meet for collection at Exhibition Centre for dinner at the Guildhall

Tea and Coffee break 09:15–09:30 and 11:00–11:40

Thursday

Breakfast 7:30–8:30 Galleria Restaurant Roger Kirk Centre

Tea and Coffee break 10:50–11:30

Meals and refreshments are included in the price of the conference.

Tuesday night's meal will be a three course sit down meal in the Galleria in James College. Wednesday lunch will be a pre-prepared packed lunch to be eaten on the bus to the field trips. Wednesday night will be hot buffet dinner at the Guildhall with the presence of the Sherriff Mayor and the Sherriff's Lady and includes a bottle of wine. The meeting will finish at lunchtime on Thursday 12th September 2013, so there will be no lunch available on the day, although there are many options on campus to purchase lunch if you so wish to.

Dietary Requirements

If you have any dietary requirements when registering you will receive a special card, please make yourself known to catering staff and place card on table to be easily identified.

Accommodation

If you have booked accommodation, you will be staying in a single en-suite room at York University Halls of Residence at James College (see map).

All bedrooms have tea and coffee making facilities and are fully equipped with bed linen and towels. The rooms do not have complimentary toiletries therefore it is asked that you bring your own. Should you forget anything, the reception at Roger Kirk Centre has spares for a small donation to York University's chosen charity.

All bedrooms on campus are networked for free internet access and all guests will be issued with a User ID and a password to connect on registering. Wireless connection is weak in the bedrooms therefore it is strongly advised that you bring along your own Ethernet cable to use in the bedrooms. Reception will only have a limited amount of cables to lend out. Wireless connection is available throughout the Exhibition Centre.

After you have registered for the conference in the Exhibition Centre, you will be asked to registered for your accommodation at the reception in the Roger Kirk Centre. The porter are available 24 hours from the reception or can be reached on 01904-323-100.

Check out is by 9:30 on Thursday 12th September 2013.

Name Badges

Name badges should be worn at all times; it assists with venue security, enables you to get meals and refreshments from catering and enables you to identify fellow delegates.

Fieldtrips

Fieldtrips buses will leave from the Exhibition Centre and will be called one at a time. Please ensure you have picked up your pre-prepared packed lunch before boarding the bus. Fieldtrips will finish at 16:00 and return you to the campus for a period of leisure before the Civic Evening Dinner. Toilet breaks will be included in the fieldtrips. Outdoor equipment and wellington boots or walking boots are required for all fieldtrips. For more details on fieldtrips please go to page:

Internet Connection and WIFI

All bedrooms on campus are networked for free internet access via a network point. Wireless access can sometimes be weak so it is strongly recommended to bring your own Ethernet cable for bedrooms as reception will only have a limited amount. All guests will be issued with a User ID and a password to connect. Wireless is available throughout the Exhibition Centre.

Facilities

The University Fitness Suite is available for all guests to use free of charge, following an induction. It can be found at the Sports and Fitness Centre, no more than five minutes' walk from James College.

Cash machines can be located at Market Square, Vanburgh College and James College (Santander branch) as well as Heslington Village within walking distance with Natwest, Barclays, Lloyds TSB and a Post Office.

There is a Costcutter supermarket on campus at Market Square – 5% discount for all delegates – please show your conference badge (minimum spend £5, not including alcohol or cigarettes).

The nearest chemist is Whitworth Chemist at 275 Melrosegate, York YO10 3SN

Luggage Storage

Thursday: 8:30–13:00 – PL006 Exhibition Centre

Please note this will be locked during the final session for security reasons. There will be no luggage storage once the conference has closed.

Social Events

Tuesday

Poster Session and Beer Tasting: Exhibition Centre Open Reception Area

17:30–19:00 – Active poster session, where poster presenters will be present to answer questions and chance to try conference beer Bog Asphod Ale and get a conference beer glass as a memento.

Welcome Dinner: Galleria Roger Kirk Centre

19:30–02:00 – With welcome talk from Liz Barber from Yorkshire Water, our welcome dinner is open to all delegates and is a great way of networking and reconnecting with old friends. The Welcome Dinner is included in the price of registration (except day delegates) which consists of three course meal. A late night bar will be available.

Wednesday

Civic Dinner at Guild Hall with the attendance of Sherriff Mayor and Sherriff's Lady.

The Civic Dinner is the more formal event of the conference with a welcome from the Sherriff Mayor. There will be a short Long Sword Dance Demonstration followed by the meal which will be a hot buffet with a bottle of wine provided for each table. The Civic Dinner is included in the price of the registration (except day delegates)

Emergency Service and Fire Procedures

Procedures in the event of a fire or other emergency will be outlined at the start of the meeting. It is your responsibility to read the information provided on evacuation procedures and to pay attention to safety announcements.

Beer and poster session

The Poster session and Beer tasting will be part of the welcome programme on Tuesday evening, starting at 17:30 in the Exhibition Centre Open Reception Area. Posters will be on show throughout the conference and we encourage delegates to view them during lunch and tea and coffee breaks.

Information for Speakers

Please come to the registration desk or conference office PT003 and let us know you have arrived in time for your presentation. If you haven't already sent us your presentation or have a newer updated version to upload, please make sure you bring it on a memory stick so we can upload it.

Rehearsal times for Speakers are as follows:

Tuesday 10th September – 11:00–13:00

Wednesday 11th September – 08:30–09:00

Thursday 12th September – 09:00–09:30

Information for Presenters of Posters

Posters will be displayed in the Exhibition Centre Open Reception Area for the duration of the conference. We ask that all presenters attend the Poster Session on Tuesday evening to discuss their work and answer questions from delegates.

Poster boards are 1 metre wide x 2 metre high Portrait (A0). Please bring your own Velcro circles with which to hang your posters. A limited supply of Velcro circles are available from the conference office PT003. Boards will be labelled according to numbers printed in this programme.

Posters must be removed by the end of Thursday by 12:00; any poster remaining after this time will be disposed of by the poster board hire company. We will have a locked luggage room on Thursday were you will be able to store your poster if you so wish.

Directions to the Exhibition Centre

By Train

There is a frequent, fast train service to York on the main East Coast Line from London King's Cross to Edinburgh. There is also a direct service between York, Leeds and Manchester Airport.

The University is a short bus or taxi ride direct from the railway station.

By Bus and coach

You can reach York by coach from many destinations around the country. National Express coaches stop at the railway station.

There are buses from the city centre approximately every 10 minutes during the day, and it takes around 20 minutes to reach the campus.

Take either the number 4 or 44 bus from directly outside of the train station to the University. Get off the bus on University Road at the Library stop under the bridge. Cross the road and head down towards the University lake where you will see signs for the Physics and Electronics Department located at the other side of the lake, there you will find the Exhibition Centre.

By Taxi

A taxi from the railway station to the University will take approximately 15 minutes. There is a taxi rank just outside the station. It can often be just as quick, and significantly cheaper, to take a bus. The bus stop is located outside the main station entrance.

We recommend drivers approach the University from the junction of the A64 and A1079 on the east of the city, from where the University is signposted.

By Car

Parking is limited and visitor parking is on a pay and display basis unless you have already reserved a parking pass. The machines only accept coins. Parking is charged at a rate of £1 per hour or £6 per day, and is free at weekends and between 6pm and 8am.

There are disabled parking spaces in all University car parks.

For satnav users, the main University postcode is YO10 5DD

By Bike

The University has a network of cycle paths and there are cycle racks in most parts of campus.

PROGRAMME OVERVIEW

The conference “Investing in Peatlands: Partnerships for a New Peatland Era” reflects the exciting stage we have reached across a partnership of policy, science and practice. Previous events have highlighted the importance of peatlands for climate change, water and biodiversity and our Commission of Inquiry presented a vision for 1 million ha of peatlands to be conserved in the UK by 2020. The four UK Environment Ministers have responded with a clear Statement of Intent on Peatlands and the basis of a framework for action (Ministerial Statement). Our task now is to help deliver action and to signal where the opportunities lie for making early progress. Partnerships can operate at different levels including international sharing of good practice, Government Departments working together, public and private sector initiatives such as the Peatland Code (Peatland Code) and site based partnerships involving local people, farmers, NGOs and statutory agencies. The conference will look at these partnerships and identify the opportunities to improve delivery of peatland conservation in a new era where the natural capital value of peatlands is reflected in the support given for their management as important ecosystems.

Tuesday 10th September

11:30–13:00 Registration

13:00 Session 1
The economic and commercial opportunities for restoring and conserving peatlands.

Session Chair: Paul Vaight

Explore the potential for business/corporate sector to help fund peatland work and consider economic perspectives to ensure landmanagers are given the right level of support to value and maintain peatlands in their healthy functioning state. This session will look at the motivations for the corporate sector in supporting environmental initiatives and how well peatland are perceived. The role of markets for peatland services will be explored along with recent assessments of the economic case for peatland action under a changing climate. We will also get the view of land managers as to what factors influence their decisions. The session will end with a Ministerial address highlighting agreement across the four UK Environment Ministers on the importance of peatland natural capital and an announcement of the pilot phase of the Peatland Code which is being facilitated by the IUCN UK Peatland Programme.

Outcome

Gain a better understanding of the economic case for peatlands and the corporate sector/ land managers motivation towards peatland restoration and management. High level Ministerial endorsement of Peatland Action and associated media opportunity.

13:00 – **Welcome**
Rob Stoneman, Yorkshire Wildlife Trust

13:15 – **Keynote Speaker**
Ian Dickie, Director Aldersgate Group

13:30 – **Market Research for Peatland Conservation**
Alex Inman, Consultant

13:45 – **Motivation for Land-managers**
John Glen, Chief, Executive, Buccleuch

14:00 – **Peatland Natural Capital in a Changing Climate**
David Thompson, Senior Analyst, UK Committee on Climate Change

14:30 – **Peatland Carbon Code Phase Launch and Next Steps**
Mark Reed, Birmingham City University/ IUCN UK Peatland Programme

15:00 – Panel discussion

15:30–15:45 – Tea and coffee break

15:45 Session 2

Public policy funding in support of peatland restoration and conservation

Session Chair: Jonathan Hughes

How does peatland fit with policy priorities internationally and in the UK? What benefits can be gained from public funding of peatlands? The session will look at the potential for peatlands as a biodiversity priority to help deliver public policy objectives across climate change, water and agriculture. The case for public funding of peatlands to help deliver these multiple objectives will be examined taking account of EU policy drivers such as the Common Agriculture Policy and the Water Framework Directive and international obligations under the Biodiversity Convention and the Kyoto Protocol. The plight of peatlands at an international level will be presented along with some of the potential policy solutions with opportunities for sharing good practice between countries. We will also hear from a local level partnership about the way in which different agencies can come together and the shared benefits for public policy that can arise.

Outcome

Understanding of peatland issues at an international level. Identify the key policy funding drivers that could help secure peatland conservation and what needs to be done to make these more effective, whilst also understanding how peatland action can help deliver government objectives. Networking across peatland projects policy makers and research initiatives.

16:00 – **Keynote Ministerial Address**
Richard Benyon, Parliamentary Under
Secretary of State for Natural Environment, Water and Rural Affairs

16:15 – **EU Policy Opportunities for Peatlands**
Luc Bas, Director, IUCN European Union Representative Office

16:30 – **Peatland Policy and Practice: an International issue**
Marcel Silvius, Head of Programme and Strategy, Wetlands and Climate, Wetlands International

16:45 – **Importance of Peatlands in the Water Environment**
Robert Brotherton, Principal Officer Agriculture and Land Management, Environment Agency

17:00 – **Yorkshire Peatland Partnership**
Tim Thom, Senior Wildlife Conservation Officer, Yorkshire Peatland Partnership

17:15 – Panel discussion

17:30 – **Highlighting Research and Partnership Approaches to Delivering Peatland Restoration**

Poster session and beer tasting

19:30 – Welcome Dinner

Wednesday 11th September

09:00 – **Welcome**

Rob Stoneman, Director, Yorkshire Wildlife Trust

09:05 **Session 3 – Taking action to deliver peatland objectives**

09:05 – **Peatlands Climate Mitigation and Agriculture initiative**
Maria Nutinnen, Climate Change Officer, MICCA – Mitigation of Climate Change in Agriculture Programme, Food and Agriculture Organization of the United Nations - FAO

09:25 – **Round One of Workshops**
The six themed workshops are aimed at providing further detail to support the development of peatland actions in the devolved government administrations and to inform the IUCN UK Peatland Programme Opportunity map for peatlands. There will be two rounds of 3 parallel workshops each lasting 50 minutes and holding 30-40 delegates.

1) Carbon Research on Peatlands – Chair: Richard Birnie

The objective of this workshop is to explore how we improve the scientific evidence base for carbon in light of the need to inform the Peatland code metrics, validation of proxy models e.g. the Greenhouse Gas Emissions Site Types (GEST) approach and potentially UK Greenhouse Gas accounting.

- How do we coordinate the various research projects funded by Defra with others such as Peatscapes, MFF, Flows etc to ensure we make the most of the available data
- Can we develop guidance for research staff and restoration projects across the UK to improve synergy and consistency in data gathering to make it most useful. Particularly consider establishing baseline methods to facilitate long term monitoring and survey.
- Identify any science gaps in carbon monitoring and opportunities to fill these.

2) Opportunities and Hurdles in the water sector – Chair: Pippa Chapman

The focus is on the economics and hurdles to improve water quality from peatland management.

- What can we do now to encourage more restoration management for water, recognising that there are still some science gaps and in light of Ofwat focus on value for money.
- What are the sticky issues and how are we dealing with these.
- Where does the consensus lie.
- Where are the good case examples.

3) International peatland projects – Demonstrating Success – Chair: Piet Wit

Consider what can be done to ensure the IUCN Community globally is equipped with the peatland story as an exemplar of nature based solutions. Consider how work in the UK can help support action elsewhere – particularly in SE Asia. How do we support the UN FAO national mitigation action framework.

- Agree key messages for the international Demonstrating Success booklet and plan how we use the document to best effect in building and supporting the IUCN Commission on Ecosystem Management work.
- Identify opportunities for international Ministerial meetings and peat briefing.

10:15 – **Round Two of Workshops**

4) Peatland opportunities for funding and lessons learned from PES – Chair: Helen Dunn

The aim here is to consider what we have learned so far from the Defra funded Payment for Ecosystem Services work in relation to Peatlands (consider both lowland and upland).

- Identify the hurdles/opportunities for PES and recommend action to help take the process forward.

5) Ecological Perspectives on Restoration – Chair: Paul Lunt

Prepare the ground for developing guidance on Peatland restoration to support the Peatland Code and ensure best practice across the various restoration projects as well as providing advice for land managers/ env consultancies. Highlight the ecological basis behind a healthy peatland and the impact of restoration management on the ecology.

- Consider how the IUCN UK PP website can be used to establish good practice, share views and build on the Brooks and Stoneman (and other guides).
- Identify Restoration guidance needs and how to get best practice agreed.
- Identify possible organisations to help develop good practice.

6) Opportunities and Hurdles of Partnership Working – Chair Martyn Howat

Aim to draw lessons on what makes a successful peatland partnership and explore the win-wins for different sectors and look at the tools that help facilitate good partnerships.

- Identify good examples from moorland community including the role of the land manager seminars run by Heather Trust, and consider the opportunity to build partnerships at the UK level through our IUCN UK PP website.

11:00 – Refreshments and prepare for field trips

11:30–16:00 Fieldtrips

(continues)

16:00–19:00 – Period of Leisure

19:15 – Meet at collection point for Civic Reception

19:30 – Civic Reception at the Guild Hall with Long Sword Dance Demonstration with Sherriff Mayor and Sherriff's Lady

Thursday 12th September 2013

09:30 – Welcome
Stuarts Brooks, Director, John Muir Trust

Session 3– Taking action to deliver peatland objectives

Session Chair: Stuart Brooks

This session will focus on the strategic action required to ensure a long term approach to maintaining peatlands. At a global level we will learn of peatland initiatives to help nations deliver peatland strategies in an agricultural context, including grazing and cropland management. Workshops will look in detail at six areas of activity followed by field trips to local peatland restoration sites. A series of presentations will look at the scientific evidence to support the delivery of peatland objectives. An update on progress from research initiatives exploring carbon will be presented and their role in enabling potential corporate funding and contribution to national climate change targets through the Peatland code will be explored. The session will end with a round-up of the opportunities for delivering peatland action, identifying the early achievable steps across different sectors and setting the benchmarks for delivery of the Commission of Inquiry vision.

Outcome

Understanding of the key commissioned research aimed at informing the delivery of peatland action and awareness of the strategic direction and priority actions requiring further research. Establish the basis of an Opportunity map for forward action on peatlands.

09:45 – **Peatland Carbon Research including Methane Management**
Chris Evans, Biogeochemical Modeller, Centre for Ecology and Hydrology
Andreas Heinemeyer, Ecosystem Ecologist, Stockholm Environment Institute, York

10:00 – **A Review of Upland Evidence**
Dave Stone, Deputy Chief Scientist Natural England

10:15 – **Peatland Research in Scotland – supporting progress from national policy development to practical restoration efforts**
Rebekka Artz James Hutton Institute
Roxanne Andersen University of the Highlands and Islands

10:30 – **Restoration of Lowland raised bogs in Scotland**
Eric Coull, Conservation Programmes Manager, Scottish Wildlife Trust

10:45 – Panel Discussion

11:00–11:25 – Tea and Coffee break

11:30 – **Developing the Peatland Carbon Code metrics**
Richard Birnie, LandForm Research

11:45 – **Opportunities Map for peatlands**
Clifton Bain, Director IUCN UK PP

12:00 – **Closing remarks and close of conference**

Rob Stoneman, Director, Yorkshire Wildlife Trust

POSTER ABSTRACTS

1 **Dr Andreas Heinemeyer**
Stockholm Environment Institute – University of York

Modelling UK upland peatland carbon dynamics – past present and future ecosystem services implications

Modelling soil carbon dynamics has received remarkable attention over the past decades, mainly because of the large soil organic carbon stocks and the potential climate feedback. Surprisingly, global models still struggle to adequately represent soil C-rich peatlands, their water table dynamics and thus methane fluxes and other ecosystem service related implications. We discuss the MILLENNIA peat cohort model around: (1) variable past Holocene climate spin-up with corresponding dynamic WTD, plant communities and litter quality; (2) recent changes in climate and peat development; (3) up-scaling across the landscape; and, (4) present preliminary data on climate change scenarios and peat moisture feedback implications on upland bird species.

2 **Julia McCarroll**
University of Gloucestershire (Organisation)
Yorkshire Peat Partnership (Sponsor)

Application of palaeoecological techniques to inform mire and moorland conservation in Yorkshire

This poster presents the initial findings of a palaeoecological PhD project covering three sites conserved by the Yorkshire Peat Partnership and how these findings can be used for restoration and conservation.

3 **Phoebe Morton**
SEI-Y/Environment Dept, University of York

A Burning Issue: Assessing Alternatives for UK Blanket Bog Management

This poster presents an introduction to the Defra funded peatland project BD5104, detailing the catchment- and plot-scale experimental set up and management regimes on the three sites. Baseline data for carbon and water fluxes and vegetation composition are presented and the outlook for the project is discussed.

4 **Kathryn Smith**
The Impact of Tracks on Blanket Bogs

5 **Deirdre B. Wilson**
Scotland's Rural College (SRUC)

Reworking Old Peatland Production Systems: Improving Sustainability and Ecosystem Services with Seaweed

All over the UK landscape there is evidence of parallel ridges running down hill sides. These ridges are remnants of former arable and horticultural production systems. Many of these sites are characterised by peatlands and would now be classified as too poor to cultivate and under current agricultural policy there are no incentives to encourage production. However, in the past, by turning the soil into ridges drainage was improved allowing cropping to take place. To determine the potential impact and benefits of a return to this form of production we have reinstated a series of ridges in North Uist, which had not been cropped in over 50 years. The findings of the pilot indicated that historical knowledge is essential in reinstating this type of production, modern agricultural machinery is currently not suitable, seaweed is a useful and sustainable addition to the system, ecosystem impacts are minimal compared to those associated with imports and production is viable when labour is available. Reinstating this type of production system could offer potential to alleviate some of the issues of food security and a return to higher levels of self sufficiency, whilst offering viable production from Peatlands with minimal environmental impact.

6 **Laetitia Pettinotti, Rebekka Artz, Steve Chapman, Dominic Moran & Andrew Moxey**
Scotland's Rural College (SRUC)

Peatland restoration: some further illustrative economics.

Peatland restoration incurs various costs that need to be compared to benefits to determine the economic merits of restoration. Estimated emission profiles with and without restoration plus with and without climate change were combined with carbon prices and restoration cost data to generate illustrative benefit:cost ratios and net present values for different peatland categories in Scotland. The results suggest that restoration is generally justified

in the medium to long term by GHG emission savings alone, even without climate change effects. This finding is reinforced if non-GHG benefits and climate change effects are considered.

7 **Neil McInnes**
Forestry Commission Scotland

The Flows Restoration on the National Forest Estate

We will have details of some of the work underway on the National Forest Estate in the Caithness and Sutherland Flows, where woodland removal is taking place and large scale peatland restoration is being carried out.

8 **Rosslyn Colderley**
Lancashire Wildlife Trust

Natural Carbon Capture – Business Support Scheme

9 **David Hardgreaves**

Working on Upland Commons

10 **Chris Dean**
Moors for the Future Partnership

10 years of Moors for the Future

From one HLF project in 2003 – restoring the devastated moorlands of the Peak District National Park – to an established programme of over 30 projects covering the Peak District and South Pennines in 2013: the Moors for the Future Partnership celebrates its achievements, innovation and knowledge through moorland conservation, science and raising-awareness**.**

11 **Philip Straton**
Moors for the Future Partnership

Evolving of Stone gully Blocking in Partnership

Thousands of gully blocks have been used to combat peat erosion in the Peak District and South Pennines. The Moors for the Future conservation team have worked with funders, partners and contractors to trial and develop techniques and a programme of works to improve the effectiveness of moorland restoration – here we share our knowledge and expertise gathered from multiple-projects and partners.

12 **Neil McInnes**
Forestry Commission Scotland

Land Management Planning for Peatland Restoration in the Flow Country.

North Highland Forest District is currently undertaking large scale restoration work in the flow country – associated with Land Management Plan reviews.

13 **Andrew McBride**
Scottish Natural Heritage

Green Stimulus Peatland Restoration Project

14 **Olivia Bragg**
University of Dundee

Top Bog

15 **Stephen Chapman and Lydia Cole**
The James Hutton Institute

Peatland restoration: potential abatement and estimation of carbon savings

Using available literature – we estimate the potential abatement from peatland restoration and use this to calculate the carbon savings from past and future restoration in Scotland.

16 **Lydia Cole**
Biodiversity Institute, University of Oxford

An investigation into the resilience and sustainable management of tropical peat swamp forests.

As the final frontier for agricultural development in Sarawak, Malaysian Borneo, the coastal peat swamp forests are undergoing rapid conversion, predominantly into oil palm plantations. However, little is known about the ecological resilience of this ecosystem and whether it can recover from such disturbance. This study aims to shed light on peat swamp forest dynamics, focusing on responses

to past environmental disturbance, both natural and anthropogenic, and the relevance of this information for contemporary management. Fossil pollen and charcoal analysis were performed on peat cores extracted from three locations in Sarawak. Results demonstrate that these ecosystems have experienced limited disturbance since their development over 2000 years ago, with peat swamp forest taxa dominating the vegetation profile. Wildfires have occurred throughout, but there is evidence for significant human disturbance only in the last several hundred years. In terms of management, there is a mis-match between local stakeholders and the international community in the ways they value this ecosystem which needs to be addressed if these areas are to be conserved into the future.

17 **Neal Wright**
Micropropagation Services

Sphagnum Moss Restoration

18 **Chris Miller**
Lancashire Wildlife Trust

Wildlife Trust and Peat Extractor: an unlikely partnership?

In 2012 Lancashire Wildlife Trust successfully campaigned for the cessation of peat extraction at Chat Moss, near Manchester. However, less than a mile away an unlikely partnership was developing. We present evidence from a successful partnership where the wildlife lobby has worked directly with the peat extraction industry to deliver the restoration of an active peat extraction site near Manchester – Little Woolden Moss.

19 **Andy Lloyd**
North Pennines AONB Partnership

An update on the National Peat Depth and Carbon Storage project.

The project aimed to use existing and new data contributed by the peatland community to produce new estimates and maps of peat depth and carbon storage across England's peatlands.

20 **Rosie Fewings** and **Jeff Warburton**
Department of Geography, Durham University

Assessing the role of peat bog restoration in mitigating carbon loss by upland erosion

Currently, one of the main motivations behind peatland restoration attempts is increasing the sequestration of carbon and decreasing the amounts of carbon lost through erosion. Field monitoring of peatlands provides important insights into how much carbon is contained within these ecosystems and how it is lost through erosion. Such information can be used to direct management strategies to increase the amount of carbon stored within them. This approach has been applied at Flow Moss, a 7 hectare upland blanket bog located in the North Pennines AONB. Data collected address three key research questions:

- How are peatland carbon stores assessed, and what is the local carbon store at Flow Moss?
- How have restoration methods at Flow Moss impacted on sediment loss via erosion?
- What are the dominant processes driving erosion at Flow Moss?

Methods used in data collection include Terrestrial Laser Scanning, Ground Penetrating Radar, Sediment traps, erosion pins and peat coring. Data collected are used to develop a sediment budget for the site, which can be combined with carbon content estimates to establish the main mechanisms and pathways of sediment/carbon loss from the site and assess the effectiveness of restoration methods. Initial results suggest that peat loss from the site is decreasing, primarily due to vegetation encroachment from the bog margins, although peat flats remain bare and active.

21 **Phoebe Morton**
SEI-Y/University of York

A Burning Issue

Assessing Alternatives for UK Blanket Bog Management. Effects on GHGs and vegetation under different managements.

22 **Morag Angus**
Exmoor Mires Project

The Tentacles of Zog*: Reaching from Exmoor and beyond!

The Exmoor Mires Project was set up in 2010 with multiple objectives in order to restore the peatlands of Exmoor. In order to achieve this a holistic partnership approach is core to our principles and approaches of working. We work with individuals, communities, statutory organisation, private companies, universities, national networks locally, nationally and worldwide in order to discuss, research, communicate and deliver a peatland restored and robust enough to withstand the challenges of climate change.

* Zog is a ancient Somerset dialect word for bog or wet ground, we have used the name to show how far and wide interest in an under rated part of Somerset (The Zogs) has extended.

23 **Brendon Wittram**
Moors for the Future Partnership

Working with a Technical Advisory Group

24 **Chris Fry**
Moors for the Future Partnership

Yorkshire's moorlands – Yorkshire's Water – Yorkshire's people

25 **Matthew Scott-Campbel**l
Moors for the Future Partnership

Moorland Restoration on Private Land in the Peak District: Natural England Conservation Plan Project (NECPP) 2010 -13

A reflective look at the work and achievements of the NECPP in delivering moorland restoration on privately owned lands in the Peak District National Park.

26 **Sharon Davison**
Moors for the Future Partnership

10 years of Partnership Working

Working with multiple partners on a programme of projects over a 10 year period.

27 **Robin Sen**
Manchester Metropolitan University

Soil microbiome responses to peatland restoration

We will report on soil bacterial and fungal microbial community dynamics in bare degraded peat and vegetation mosaics resulting from active moorland restoration in the Southern Pennines.

28 **Robin Gray**
Pennine Prospects

Cultural Services and the South Pennine Watershed Landscape

29 **Mark Steer**
Somerset Wildlife Trust

Future-proofing the Somerset Levels: A Need for Information and Innovation

A summary of current projects – projections for future of ecosystem service provision and need for information in the Somerset Levels.

30 **Renato Iregui**
Peatlands Plus

Restoring UK Peatlands for Carbon Capture, Habitat Creation and Wildlife Preservation

31 **Gareth Roberts**
Moors for the Future Partnership

New Moorland Citizens in the Peak District

New MoorCitizens are leading one of the biggest 'Citizen Science' projects in the Peak District and South Pennines moorlands. Local people – MoorCitizens – are collecting valuable data on their moorlands which will measure long-term effects of climate change. How can you help? Come along and see how you can engage with volunteers and may be demonstrate your research in the Peak District.

32 **Jonathan Walker**
Moors for the Future Partnership

Evidencing the impact of blanket bog restoration at a policy relevant scale

33 **Matt Buckler**
Moors for the Future Partnership

Restoration management recommendations for stabilising & re-vegetating bare peat

34 **Mike Pilkington**
Moors for the Future Partnership

Does the restoration of blanket bogs help to reduce flood risk?

Three experimental mini-catchments on heavily degraded and eroded blanket bog on Kinder Scout were instrumented to monitor rainfall and discharge on a 10 minute sampling frequency before and after restoration activities. Two additional reference mini-catchments (on intact and 10 year old re-vegetated blanket bog) on nearby Bleaklow plateau were similarly instrumented and monitored. Approximately one year of pre-restoration monitoring data were collected and then one of the three Kinder mini-catchments was excluded from all restoration, one was re-vegetated and the third was re-vegetated and its erosion gullies blocked with stone and timber dams. Initial findings suggest that heavily eroded mini-catchments have significantly higher and sharper hydrograph discharge peaks, with significantly longer lag times between peak rainfall and peak discharge. There is also emerging evidence to suggest that the 10 year re-vegetated catchment displays hydrograph characteristics which are intermediate between the eroded and intact catchments. The answer to the question posed in the title requires more time for the effects of restoration to be fully realised.

35 **Rachel Maskill**
Moors for the Future Partnership

10 years of restoration and monitoring

36 **Rowan Watson-Taylor**
Moors for the Future Partnership

The Planning and Execution of a Moorland Conservation Works Contract

Explaining the process and procedures, the land use interests of the site, the selection of contractors, the consents required, working with the landowner to an agreed budget, and keeping all parties satisfied.

37 **Sarah Proctor**
Moors for the Future Partnership

Evidencing the impact of the Dark Peak NIA on blanket bog and moorland fringe habitats

38 **Steve Maynard**
Moors for the Future Partnership

For Peat's Sake: Restoring our Moorlands

A summary of restoration techniques appropriate to different areas (especially heights) of a typical moor.

39 **Tia Crouch**
Moors for the Future Partnership

Moorland condition and water quality across an entire water treatment works catchment.

The peatlands of the Peak District, Southern Pennines are highly contaminated with anthropogenically derived, atmospherically deposited pollutants, such as heavy metals. This is due to their location between the cities of Manchester and Sheffield, the centre for the 19th century English Industrial Revolution. These peatlands are also severely eroded; therefore, erosion could be releasing these pollutants into the fluvial system, representing a threat to both aquatic ecosystems and drinking water supplies. The aim of this project is to identify spatial and temporal variability of water quality within the Bamford water treatment works (WTW) catchment and to assess the contribution of moorland condition to water quality. Water samples were analysed for carbon (DOC, POC & TOC), pH, hardness and a suite of heavy metals, including copper, iron and zinc. The results highlight a number of issues within the Bamford WTW catchment; under the Water Framework Directive (WFD) streams are not achieving 'good' status for pH, copper and zinc, and under the Drinking Water Standards (DWS) streams are not achieving targets for aluminium, iron and colour. Overall, this project is intended to provide evidence of the links between moorland restoration and management, and DWS and WFD objectives; therefore, enabling continued support for moorland restoration work. This project was funded by the Environment Agency and Severn Trent Water Limited.

40 **Donna Carless**
Swansea University

Ground Penetrating Radar (GPR) and 3D Modelling: A key to improve estimates of peat volume for carbon quantification

Within the UK, peatlands represent the single most important terrestrial carbon (C) store. In particular, blanket and raised bogs account for around 9.5% of the UK land area, with current estimates indicating that they store approximately 3.2 Pg C (IUCN, 2011). This study aims to quantify Holocene rates of carbon accumulation in selected raised (ombrotrophic) peat bogs across the Brecon Beacons National Park (BBNP) in order to better understand the factors controlling variation in long-term carbon accumulation.

Due to their high water content and low mineralisation, the electrical properties of peat soils make them well suited for GPR investigations. An articulated 100MHz Rough-Terrain Antenna (RTA) was employed for non-invasive investigations of the sites in order to obtain comprehensive peat extent and thickness data which will be combined with carbon density figures to quantify the amount of carbon stored within each site. Furthermore, by establishing accurate age estimates, including basal age and more recent ages, accumulation rates will be inferred. The use of multiple proxies to reconstruct the palaeoenvironmental record will allow the identification of past changes in bog vegetation and to establish the past climate and environmental conditions that may account for the variability in accumulation rates found.

41 **Debra Wilson**
Moors for the Future Partnership

Be Fire Aware – interactive wildfire education

Short summary/synopsis: An innovative interactive educational tool to educate visitors to moorland areas about the causes and effects of wildfires, using interactive fire risk maps, videos, photos and games.

SPEAKERS BIOGRAPHIES

Roxanne Andersen

Roxane Andersen is a Senior Researchers at the James Hutton Institute (Aberdeen) and the Environmental Research Institute Thurso (University of the Highlands and Islands), respectively. She has over 10 years of experience in peatland and restoration ecology, starting out from a similar point of interest in peatland microbiology and vegetation succession.

Rebekka Artz

Rebekka Artz is a Senior Researchers at the James Hutton Institute (Aberdeen) and the Environmental Research Institute Thurso (University of the Highlands and Islands), respectively. Along with Roxanne Andersen, she has over 10 years of experience in peatland and restoration ecology, starting out from a similar point of interest in peatland microbiology and vegetation succession.

Clifton Bain

Clifton Bain is the Director of the IUCN UK Peatland Programme, based in Edinburgh, which is raising awareness of the multiple benefits of peatlands. Currently on secondment from RSPB, Clifton is a Zoology graduate of Aberdeen University with over 25 years' experience in wildlife conservation. For the last ten years has been based in the RSPB Scotland headquarters, in Edinburgh, as senior policy officer, covering biodiversity and climate change advocacy.

Liz Barber

Liz Barber is the Group Finance and Regulation Director – Kelda Group (owners of Yorkshire Water) and joined in 2010. She is part of the Fellow of Institute of Chartered Accountants. Ernst & Young 1987–2010. 2001 Partner, 2006 Head of Audit for the North of England and Leader of Water Utilities.

Luc Bas

Luc Bas is the Director of IUCN European Union Representative Office. In his current capacity, Luc represents the IUCN Secretariat and provides leadership and guidance for all activities undertaken within the European Union context in Brussels. Prior to IUCN, Luc has worked as adviser on international sustainable development policies for both the Belgian Federal and Flemish Governments. He was a representative for the Government at the UN Commission on Sustainable Development, the OECD national Sustainable Development expert panel and the Belgium Federal Council, and at various interregional networks on Sustainable Development. More recently, Luc represented The Climate Group in Brussels as its European Director, working with business and government to reach more ambitious EU climate policy and prepare for a true energy transition.

As International Director of The Climate Group's States and Regions Alliance he established one of the most significant networks of sub-national governments leading on climate change. Through Luc's leadership the Alliance has now a functioning governance structure, involves leaders of governments from all over the world and uses its technical working groups to feed into the decision making at all levels. Luc is a sought-after

speaker and moderator at high-level events on Sustainability and has worked closely with Ministers and business leaders. He holds a Masters degree in industrial engineering and postgraduate degrees in both environmental science and international politics, and he is fluent in English, Dutch, German, French and Spanish.

Richard Benyon

Richard Benyon has been MP for Newbury since May 2005. Before coming to government Mr Benyon served as a Shadow Minister for the Environment, Fisheries and Wildlife. Prior to this appointment he was a Party Whip. He has also served on the Home Affairs Select Committee. Mr Benyon lives in West Berkshire where he is a farmer. He is a former soldier and is a founder Trustee of the charity Help for Heroes.

Nicolas Bertrand

Nick Bertrand is interim Coordinator, The Economics of Ecosystems and Biodiversity (TEEB), an initiative hosted by UNEP. Prior to joining UNEP, Nick worked on economics and business at the IUCN (2000-2006). He contributed to the establishment of the first programme on business and biodiversity and, as part of this endeavour, co-authored the IUCN Strategy for business engagement.

He was contributing editor of the Business and Biodiversity Handbook for Corporate Action, published on the occasion of the 2002 World Summit for Sustainable Development (with the World Business Council for Sustainable Development) and co-editor of TEEB in Business and Enterprise (published in 2012 by Routledge). Nick obtained a BSc(Econ) and MSc(Econ) from University College London and an MPhil from the Institute of Forestry, Agricultural and Environmental Engineering (Paris).

Dr Richard Birnie

Dr Richard Birnie is a geomorphologist who works as an independent research consultant on peatland carbon, restoration and land management issues. He has over 40 years' experience in environmental and land management research formerly as a senior member of staff at the Macaulay Land Use Research and currently as director of LandForm Research.

Stuart Brooks

Stuart studied geography at Newcastle University where he was introduced to upland and peatland ecosystems. Stuart joined the Scottish Wildlife Trust in 1995 as a field officer supporting an EU peatland conservation project. It was there that Stuart co-authored The Bog Management Handbook and was involved in a large range of habitat and species conservation initiatives in Europe, eventually leaving the Trust in 2009 as their Director of Conservation. Stuart joined the John Muir Trust as its Chief Executive in 2009. He has held various positions on conservation and land management bodies and is currently the Chairman of the IUCN United Kingdom National Committee and has been a member of the IUCN UK Peatland Project steering group since its inception.

Robert Brotherton

Robert is Principal Officer-Agriculture and Land Management, within the Environment Agency's Yorkshire and North East Region, Environment and Performance Team. His role

involves working with both internal external partners in relation to agriculture and land management issues within the Region and also nationally. A native of Ashington in Northumberland, an early career in practical agriculture involved working in a range of farming, within Northumberland, East Anglia and Scotland. Following completion of an HND in Agriculture at Writtle Agricultural College in Essex in 1977, Robert spent time travelling to and working in Australia and was able to add further to his practical agricultural knowledge under very different economic and climatic conditions to those prevailing in the UK.

Pippa Chapman

Pippa Chapman is Reader in Biogeochemistry at the University of Leeds, working in the field of land and water management. Her research focusses on the impacts of land management, atmospheric deposition and climate change on peatlands, in particular on how they influence the quality of surface waters draining these areas.

Eric Coull

Eric is a senior project and programme manager with substantial experience in forestry, natural resource management and wildlife and habitat conservation. He currently works as Conservation Programmes Manager with the Scottish Wildlife Trust and manages peatland restoration and ecological; surveying projects. He is currently developing new projects for funding under the Scottish Government's Green Stimulus Peatland Regeneration Project. Eric returned to UK in 2009 after almost 20 years overseas with global NGOs, mainly as a Programme Leader/Country Representative: 8 years with VSO in Malawi and Nepal and 9 years with WWF in Vietnam Cambodia, Laos and Thailand and has a wide range of resource management experience including people and financial management. He previously worked in Forestry in the Highlands of Scotland, and North Yorkshire and as a Woodland Manager and contractor in SW England. Eric holds a Post-Graduate qualification in Protected Landscape Management and qualifications in Forestry and Accounting and worked as a Local Government Accountant before changing careers. Eric currently volunteers one day a week for the National Trust for Scotland.

Rea Cris

Rea Cris trained as an art historian but has a personal interest in the written and visual communication of climate change to the public. She is the Communications Coordinator for the IUCN UK Peatland Programme and in her other role she works for Scottish Environment LINK in the parliamentary office.

Ian Dickie

Ian Dickie is director of business development at eftec, and has managed an extensive range of natural resource economics work. Ian's current and recent work includes: the definition and sustainable management of natural capital; inputs to Defra's Ecosystem Markets Taskforce; valuation of ecosystem services from protected areas in Europe; analysis of the potential to use biodiversity offsets; assessment of financing options for European biodiversity and ecosystem restoration objectives; impact assessments of marine management and conservation policies in the UK, Europe and UK Overseas Territories; and analysis of potential changes to CITES legislation. Ian is a Director of the Aldersgate Group, a coalition of Corporations, NGOs and influential individuals promoting the role of sound environment regulation in economic development, for whom he leads work on Biodiversity and Ecosystem Services. At eftec Ian has produced work for

a variety of clients including the European Commission, Defra and its agencies, OSPAR, The Crown Estate and private business. Prior to joining eftec, Ian was head of economics at the RSPB for five years, where he was involved a wide variety of economic issues affecting biodiversity conservation, including Water Framework Directive implementation and the impacts of wildlife visitors on local economies.

Helen Dunn

Helen Dunn is a Senior Economic Adviser working for the UK Department for Environment, Food and Rural Affairs (UK Defra) since 1999. In her role as a UK government economist, she has provided economic advice on a range of environmental policy areas including air pollution, transport and the environment, agri-environment policy and most recently on natural environment and ecosystems related issues. She has led on the publication of various guidance for environmental valuation including an introductory guide to valuing ecosystem services (Defra 2007), practical tools for environmental valuation and guidance on accounting for environmental impacts linked to central government appraisal guidance (HM Treasury 2012).

Her work is currently focused on various initiatives being taken forward on greener markets including payments for ecosystem services which were key commitments from the UK Government's Natural Environment White Paper published in June 2011. The work on PES has included publication by Defra of an Action Plan on developing the potential for PES in May 2013 and taking forward a PES pilot research fund which has included the funding of the pilot peatland carbon code among a range of other pilot PES projects.

Chris Evans

Chris Evans is a biogeochemist working for the Centre for Ecology and Hydrology in Bangor. He was worked a range of issues affecting upland and peatland ecosystems, including carbon and nitrogen cycling, and the impacts of climate, land-management and atmospheric deposition on water quality and greenhouse gas fluxes. He has particular interests in the causes of rising DOC concentrations in surface waters, and the effects of peatland restoration on methane emissions and fluvial carbon loss. He currently leads several peatland-related projects, including CEH's Conwy Carbon Catchment and a Defra-funded consortium studying the effects of management on the greenhouse gas balance of lowland peats. He is a lead author on the IPCC 2013 Wetland Supplement.

John Glen

John Glen is the Chief Executive of Buccleuch, the banner group for a diverse range of companies owned by the Duke of Buccleuch. Buccleuch covers a broad spectrum of services within the land management sector; from visitor services on the four country Estates to commercial property development, bio-energy and agricultural services. Before joining Buccleuch, John has had a long and varied financial career, spanning several continents and industry sectors.

Before returning to Edinburgh in 2008, John was based in Paris as Chief Financial Officer of Air Liquide, the world leader in industrial gases, and was extensively engaged in the development on international accounting standards as the Vice Chairman of the European Financial Reporting Group (EFRAG). Alongside his work at Buccleuch, John is a non-executive director for BIC and is Chairman of the Board at Alba Trees. John is also a member of the Board for Project Scotland, a national charity helping young

people realise their potential through volunteering. John is also one of the Vice Chairs for Scotland's 2020 Climate Group, and Co-chair for the Land Use and Forestry sub-group.

Dr Andreas Heinemeyer

Dr Heinemeyer has been working as a terrestrial ecologist at the Stockholm Environment Institute at York since completing his PhD in Biology in belowground ecology 2002, also at the University of York. His main research interests lie in linking above and below ground carbon dynamics, focusing on soil respiration component fluxes, particularly roots and their mycorrhizal fungi. He works mainly in UK forests, grasslands and peatlands. He developed the peatland cohort model MILLENNIA which recently showed the importance of climate change implications on cranefly abundance and a link to upland bird populations. In 2011 he became PI on a large Defra-funded project investigating heather blanket bog management impacts on carbon dynamics, greenhouse gas emissions, water quality and plant biodiversity. Dr Heinemeyer is the author of many related peer-reviewed publications and an editor of a book on soil carbon dynamics. He is a member of the British Soil Science Society and lives with his wife and three boys in York.

Martyn Howatt

Martyn Howatt is the former Director of Uplands for Natural England, North East Region.

Jonathan Hughes

Jonathan Hughes is director of conservation and deputy chief executive at the Scottish Wildlife Trust, a conservation charity with a membership of over 30,000 in Scotland. Since 2009, Jonathan has been chair of the IUCN UK Peatland Programme. In 2012, Jonathan was elected to the global Council of the IUCN where he represents Western Europe members. In January 2013, Jonathan was appointed as chair of the policy and programmes standing committee of IUCN Council.

Jonathan is also currently programme director for the World Forum on Natural Capital, a global event taking place in Edinburgh on the 21st and 22nd of November, 2013.

Alex Inman

Alex is an independent freelance consultant specialising in social and economic research, stakeholder engagement and technology transfer relating to natural resource management problems; particularly within the context of land and water conservation. He has worked extensively on the theory and practice of developing multi-generational land conservation agreements to deliver multiple resource protection benefits, combining academic research with practitioner experience gained on-the-ground in Europe, North America and China.

In the UK, Alex is an advisor to Defra on the development of integrated land and water policy in England and is a member of Defra's Professional Advisor Group on the roll out of the second cycle of the EU Water Framework Directive. Alex believes very strongly that the solutions to global sustainability challenges will only be achieved through improved dialogue between governmental agencies, the business community and consumers. He sees the development of the UK Peatland Code as one way of delivering this outcome.

Paul Lunt

Paul Lunt is a Senior Lecturer in Environmental Science, School of Geography and Earth and Environmental Science at Plymouth University. He has a BSc (Hons) in Environmental Biology and his PhD Thesis was on Effect of Selected ectomycorrhizal species on the growth of Quercus on reinstated open cast coal mining sites from the University of Wales, Aberystwyth. He is a member of the Institute of Ecology and Environmental Management (IEEM) as well as the British Ecological Society (BES).

Maria Nuutinen

Maria Nuutinen works as Climate Change Officer in the Mitigation of climate change in agriculture – MICCA team of the Climate, Energy and Tenure Division (NRC), at the Food and Agriculture Organization of the United Nations, FAO, in Rome. Her main tasks comprise of developing the work of the communities of practice of the MICCA Programme, policy advice, advocacy and communications on mitigation in climate change in agriculture, coordinating the collaboration of the Organic Soils and Peatlands Climate Change Mitigation Initiative and gender issues within the MICCA programme. Maria holds a Master in environmental policy. Prior to joining FAO she has worked in Finland, Argentina and France on advocacy and social movement building related to climate change, development and energy.

Mark Reed

Dr Reed is Professor of Interdisciplinary Environmental Research at the Centre for Environment & Society Research in the Birmingham School of the Built Environment, Birmingham City University. He is also Research Manager for IUCN's UK Peatland Programme. He is an interdisciplinary researcher specialising in knowledge exchange, stakeholder participation and the value of nature, with extensive experience working in UK peatlands. He has played a leadership role in research worth £9.5M, and been a funded member in teams that have secured a further £2M since completing his PhD in 2005. He has >50 peer-reviewed ISI-listed journal articles, in addition to book chapters and other publications (H index: 20). He is currently writing a book on land degradation and climate change (with Lindsay Stringer, Earthscan). His work has been covered by the Guardian, Radio 4, Radio Scotland and international media.

In 2008, Mark became the first UK researcher to be awarded a joint fellowship by the US Social Science Research Council and ESRC, and in 2009 he was awarded the ESRC's Michael Young Prize. In 2011, the Sustainable Uplands project (that he has co-ordinated since 2005) was voted "best example of impact" at the Rural Economy and Land Use programme's final conference – one of only two projects receiving awards out of over 100 investments. In 2011, he became a member of the Programme Advisory Group for NERC's Biodiversity, Ecosystem Services and Sustainability programme. He was a contributing author to the upland chapter of the UK National Ecosystem Assessment and is co-leading one of the Work Packages for the follow-on to the National Ecosystem Assessment. He was on the Roster of Experts in the second phase of DEFRA's Ecosystem Markets Taskforce. He has led teams contracted to provide input to the UK Government Commission for Rural Communities' Uplands Inquiry, the uplands review for the Government Office for Science Foresight Land Use Futures project, and the policy review for IUCN's Commission of Inquiry on Peatlands.

Marcel Silvius

Marcel Silvius has a Dutch Judiceum Cum Laude Docterandus degree in Biology and Tropical Soil Sciences from the State University of Utrecht and Nature Conservation from the Agricultural University of Wageningen. He speaks five languages: Dutch, English, German, French and Indonesian. Marcel started his international career in 1983–1986 with studies of peat swamp forests, tropical coastal ecosystems and waterbirds in Indonesia and Malaysia. His work in strategic planning and fundraising has involved networking with a multitude of international agencies, donor community and private sector. He has represented Wetlands International in many international policy fora, including over the last years in the UNFCCC to promote the role of wetlands in REDD+ and climate adaptation.

Since 2001 Marcel has been leading Wetlands International's global programmes on livelihoods and climate, developing and overseeing a broad portfolio of global projects related to wetlands and poverty reduction, peatland conservation and rehabilitation, wetlands and climate change mitigation and adaptation. He is a member of the Netherlands Platform Biodiversity, Ecosystems and Economy (led by VNO-NCW and IUCN-NC) supporting the development of the REDD+ Business Initiative and the development of Green Financing Mechanisms. Marcel has published over 60 scientific articles and reports.

Dave Stone

Dave is Deputy Chief Scientist at Natural England. His interest in the environment stems from an early passion for natural history. He went on to train in plant ecology, and starting his nature conservation career as a field surveyor for the Nature Conservancy Council. His varied career has included leading work on Species Recovery, Biodiversity Action Planning, and environmental monitoring. Latterly he has pursued two particular areas of interest: the environment and human health, which has led to him working with WHO and as UK representative on the topic in Europe; and evidence based decision making in nature conservation.

Rob Stoneman

Rob has been Chief Executive of Sheffield and Hampshire & Isle of Wight Wildlife Trusts and now runs the Yorkshire Wildlife Trust. Currently, Rob chairs the Yorkshire Peat Partnership and the IUCN UK Peatland Programme, but his interest in peatlands stems from his time studying as a student with a PhD study on climate change from peatlands and work on conserving raised bogs.

Tim Thom

Tim Thom is the Programme Manager of the Yorkshire Peatland Partnership.

David Thompson

David Thompson has worked for the adaptation team in the Committee on Climate Change since 2010, where he leads on the themes of built environment, flooding and natural environment. Before then, David was a member of Natural England's team

providing national advice on climate change and energy where he led on the role that land managers can play in managing carbon sinks, focussing particularly on peatlands. In 2010, he co-authored Natural England's publication, England's peatlands – carbon storage and greenhouse gases. Earlier in his career, David worked on Protected Landscape policy for the Countryside Agency and was a member of the team that designated the New Forest and South Downs National Parks.

Paul Vaight

Paul Vaight graduated from Oxford University in 1969 with a DPhil in Chemistry and joined BP where he held various planning and commercial positions for nearly 30 years. During the fist half of the 1990s he was BP Group strategic director and financial controller. On leaving BP, he built up a changing portfolio of part-time posts including being a trustee of the Peter de Haan Charitable Trust. In an effort to mitigate climate change, the PDHCT set up and financed the IUCN Peatland Programme. Although no longer a PDHCT trustee, he has continued as a member of the Peatland Programme's Steering Committee and now chairs the Pilot Peatland Code Steering Group.

Ruth Waters

Ruth is Head of Profession for the ecosystem approach in Natural England. Her role is to work with the science and policy communities to develop the evidence around the ecosystem approach. She then co-ordinates and uses this evidence to develop delivery methodologies and tools that can be used for practical advice and management. She was overarching project manager for Natural England's upland ecosystem service pilots, was a senior specialist in biodiversity, invasive species and was the mammal ecologist for CCW.

Piet Witt

Piet Wit is Chair of the IUCN Commission on Ecosystem Management and as such, member of IUCN council. He has been member of the CEM Steering Committee since the Montreal World Conservation Congress in 1996, serving as deputy chair under Hillary Masundire. He was member of the board of the Netherlands Committee of IUCN for 12 years. Piet is currently Director of Syzygy, a consultancy firm on Conservation-cum-Development. He is also member of the board of the Hustai National Park Trust Mongolia as well as Member of the board of the Foundation Reserves for the Przewalski Horses in The Netherlands, both IUCN members. Other functions include Secretary of the executive council of Daridibó (Guinea Bissau), Advisor to the Board of the Foundation Chimbo (The Netherlands) and Councillor of the Neder-Betuwe Municipality.

His experience includes long-term missions on biodiversity conservation and management projects, including participatory management of protected areas and their buffer zones, integrated water management and integrated rural development. Piet is especially involved in bringing together theory and practice, integrating the realities of the field into policy-making and vice versa, identifying and exploiting opportunities, and building synergy between different sectors and actors. Piet graduated at Wageningen University in 1971 on Range Ecology with a focus on Grassland ecology, Plant taxonomy and geography of tropical and subtropical regions and Entomology.

FIELDTRIPS

Fieldtrips buses will leave from the Exhibition Centre on Wednesday 11th September 2013 at approximately 11:30 and will be called one at a time. Please ensure you have picked up your pre-prepared packed lunch before boarding the bus. Fieldtrips will finish at 16:00 and return you to the campus for a period of leisure before the Civic Evening Dinner. Toilet breaks will be included in the fieldtrips. Outdoor equipment and wellington boots or walking boots are required for all fieldtrips.

May Moss

May Moss is a blanket mire, located on the watershed between Eller Beck and the River Derwent headwaters and because it draws water solely from rainfall it is an ombrotrophic peatland. It is the largest single area of blanket bog on the North York Moors (representing 8.9% of this resource) and supports a plant community scarce in eastern Britain.

The blanket mire comprises two basins with deep (>5m) peat deposits centred on the headwaters of Eller Beck and the southwards draining Long Grain. Much of the Long Grain basin is currently covered by plantation (Pinus contorta) forestry. The western section at the head of the Eller Beck is 71Ha, has long been protected with SSSI status, and now forms part of the North York Moors SSSI/SPA. The eastern section draining into the Derwent catchment via Grain Beck was afforested between 1975 and 1983.
The project area is owned and managed by the Forestry Commission, the UK government forestry agency. Fylingdales MoD station and Forest Commission fencing have protected the site from grazing and human access since the 1960's, thus the bog is largely in a rare intact virgin condition. The surface wetness of May Moss is a delicate balance between precipitation, evapo-transpiration and surface run-off, and thus affected by the climatic regime and land use practices on and adjacent to the peat land.

Askham Bog

Askham Bog is remarkable survivor of the ancient fenlands of Yorkshire. It occupies the site of an ancient lake, left behind by a retreating glacier 15,000 years ago – the low hill to the south of the Bog, along which the A64 road runs, is the terminal moraine from that glacier. Since Roman times it has been used by local communities as a source of peat for fuel, resulting in a mosaic of habitats and a legacy of ditches, probably originally used for peat extraction.

The edges of the Bog are kept base-rich by water draining from the moraine and harbour the greatest diversity of plants and insects, including marsh orchids, marsh violet and meadow thistle. The colony of gingerbread sedge in Far Wood is the largest in England and some of the royal ferns are huge and probably very old.

The site was once renowned for water beetles and though some rare species still occur, many were lost when the adjacent Challoner's Whin was used as a municipal dumping ground early in the 20th Century. However, the moth fauna is still exceptional, with rare species such as the fen square-spot. Birds are abundant, including woodcock, buzzard, willow and marsh tits, grasshopper and reed warblers. In winter huge twittering flocks of goldfinch, lesser redpoll and siskin feed on birch and alder seeds. Roe deer and foxes

are seen regularly and the pond is a great place to watch water voles, while overhead many dragonflies including the spectacular emperor can be seen on warm summer days.

In 1946, the Bog was purchased by the famous sweet manufacturers Francis Terry and Arnold Rowntree and the Yorkshire Naturalists' (now Wildlife) Trust was formed to receive it as a gift: Askham Bog therefore holds a special place in the history of nature conservation in Yorkshire. Decades of active management, including cutting meadows for hay and grazing by Exmoor ponies, have restored in biodiversity.

Thorne and Hatfield

The Humberhead Peatlands comprise Hatfield Moors and Thorne Moors – with its component parts Goole Moors, Crowle Moors and Rawcliffe Moors. They are all nationally and internationally important for their wildlife. Only 10,227 hectares of lowland raised mire is left in England and Thorne and Hatfield represent approximately 31% of this.

Thorne and Hatfield Moors are the two largest lowland raised mires in Britain, covering approximately 3,000 hectares in total. They are considered to be the only true continental raised mires in Britain with a strong affinity to the Baltic lowlands.

The importance of Thorne and Hatfield Moors is confirmed by their designations:

- Sites of Special Scientific Interest
- Special Protection Areas under the European Birds Directive
- Special Areas of Conservation under European Habitats Directive
- Qualifies as Wetlands of International Importance under the terms of the Ramsar Convention.

So far the recorded insect fauna of both Moors exceeds 5,500 species – around 25% of British fauna – with over 30 Red Data Book species and over 250 nationally scarce species. Six species are known from no other sites in Britain, including three that were new to Britain in 1992. Botanical interest includes royal fern, bog rosemary, the insectivorous round leaved sundew and bladderwort, and the greater yellow-rattle.

Quite by accident in October 2004 an amazing discovery was made by M. Oliver, a retired mineral planning officer and regular attender at Forum meetings. Out on the moor he found what he considered an unnatural wooden configuration, which he described as 'the hand of man' at work. What had escaped being harvested for 'multipurpose compost' was subsequently investigated and has been dated as Neolithic in origin. There is debate still as to the purpose and function of the structure. Although there appears to be no definitive explanation, it does prove beyond the shadow of a doubt the value of these unique moors – not only for their incredible biodiversity but their unique archive of climate change and anthropomorphic interest.

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